

L = length of circular arc PC-PT
 (Sta change)
 R = radius
 D° = degree of curve
 A° = central angle
 M = mid-ordinate
 LC = length of chord PC-PT
 T = tangent length

$$R \text{ (arc definition)} = \frac{(180) (100') \div \pi}{D^\circ} = \frac{5729.5780}{D^\circ}$$

$$T = R \ Tan (\frac{1}{2} A^\circ)$$

$$L = \frac{(100') A^\circ}{D^\circ} = \frac{(100') R A^\circ}{5729.5780} = 0.01745329 R A^\circ$$

$$LC = 2 R \ Sin (\frac{1}{2} A^\circ)$$

$$M = R [1 - \Cos (\frac{1}{2} A^\circ)]$$

TxDOT uses Arc Definition
to establish a horizontal curve.

For example:

a given degree of curve
of $6^\circ 15''$, then

$$\begin{aligned} R &= (5729.5780) \div (6.25^\circ) \\ &= 916.7325' \text{ Radius} \end{aligned}$$

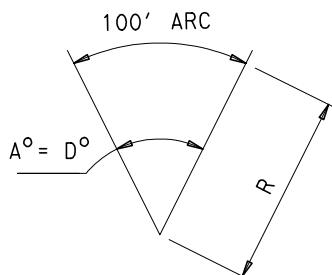


Fig. 5-9